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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/538,276	11/16/2005	Morgan Larsson	1807-018SPUS1	9416
2292 7590 07/03/2008 BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747				
EXAMINER EWALD, MARIA VERONICA				
ART UNIT		PAPER NUMBER		
1791				
NOTIFICATION DATE		DELIVERY MODE		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/538,276

Applicant(s)

LARSSON ET AL.

Examiner

MARIA VERONICA D. EWALD

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2008.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-8 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 10 June 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/CDC)
4) ☐ Interview Summary (PTO-413)
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____
Paper No(s)/Mail Date _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

13. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Feygin, et al. (U.S. 5,637,175). Feygin, et al. teach an arrangement for the production of a three-dimensional product which arrangement comprises a work bench on which the said three-dimensional product is to be constructed (item 16 – figure 2), a powder dispenser which is arranged to apply a thin layer of powder onto the work bench to create a powder bed (column 23, lines 5 – 15), an irradiation gun for transmitting energy to the powder so that melting of the powder takes place (item 7 – figure 2; column 23, lines 42 – 55), the arrangement comprising a casing within which the pressure is reduced in relation to the atmospheric pressure and within which the work bench and the irradiation gun are located (figure 2; column 23, lines 35 – 55), wherein the powder dispenser is directly accessible from outside the casing for refill of powder material while production is in progress (figures 2 and 2A); wherein powder dispenser is constructed and disposed such that access to the powder dispenser from outside the casing does not affect the pressure conditions inside the casing (item 11 – figure 2; column 23, lines 5 – 15); wherein a column of powder in the powder dispenser acts as a pressure barrier

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between the inside of the casing and the environment outside the casing (item 12 – figure 2).

Claims 1 – 2 and 5 – 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Forderhase, et al. (U.S. 5,252,264). Forderhase, et al. teach an arrangement for the production of a three-dimensional product which arrangement comprises a work bench on which the said three-dimensional product is to be constructed (item 6 – figure 4), a powder dispenser which is arranged to apply a thin layer of powder onto the work bench to create a powder bed (item 20 – figure 2), an irradiation gun for transmitting energy to the powder so that melting of the powder takes place (item 10 – figure 2), the arrangement comprising a casing within which the pressure is reduced in relation to the atmospheric pressure and within which the work bench and the irradiation gun are located (item 2 – figures 1 and 2; column 5, lines 1 – 20), wherein the powder dispenser is directly accessible from outside the casing for refill of powder material while production is in progress (item 40 – figures 5 and 6; column 11, lines 15 – 40); wherein the powder dispenser is constructed and disposed such that access to the powder dispenser from outside the casing does not affect the pressure conditions inside the casing (column 11, lines 1 – 15); wherein there is a first chamber which encloses the work bench (item 25 – figure 6; column 5, lines 25 – 35), and a second chamber which encloses the irradiation gun (figure 6; column 6, lines 13 – 30), the chambers being located inside the casing and connected to each other via a duct (item 26 – figure 4; column 5, lines 25 – 35); wherein the powder dispenser is arranged in association with

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the first chamber (figure 6); wherein the apparatus is comprised of a supply device in the form of a container with compartments which can be moved so that powder can be supplied to the powder dispenser from the different compartments (column 11, lines 1 – 40; column 13, lines 35 – 50).

Claim Rejections - 35 USC § 103

14. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin, et al. Feygin, et al. teach the characteristics previously described but do not teach that the column of powder is 1000 mm. However, monitoring the amount of powder to be maintained within the dispenser is within the level of one of ordinary skill in the art and is a variable that is controlled and thus, can be optimized. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980). Because the entire system is controlled externally to monitor the fabrication of the three-dimensional object and the variables associated with the process such as laser position/control, atmosphere and temperature, controlling the level of powder ensures that there is enough supply to maintain smooth operation without having to cease fabrication of the object and ensures that enough powder is being recycled back to the dispenser.

Thus, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the apparatus of Feygin, et al. such that the column of powder is maintained at 1000 mm for the purpose of ensuring that there is adequate powder supply to complete fabrication of the object without having to discontinue operation to reload the dispenser.

Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Feygin, et al. or Forderhase, et al. in view of Andersson, et al. (U.S. 2004/0026807 A1).

Feygin, et al. and Forderhase, et al. teach the characteristics previously described but do not teach that the irradiation gun comprises an electron gun.

This, however, is an obvious modification to one of ordinary skill in the art. For example, in a rapid prototyping apparatus, Andersson, et al. teach a casing within which a build bin is disposed. A platform on which an object is fabricated lies within the build bin and translates in the vertical direction. To cure the material deposited on each layer of the object, an electron gun is used (item 6 – figure 1; paragraph 0035). Thus, the electron gun is merely one type of irradiation device which may be used to cure sequential layers of the object.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to configure the apparatus of either Feygin, et al. or Forderhase, et al. such that the irradiation device is an electron gun for the purpose of curing each deposited layer of the object, since electron guns are merely one type of

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irradiation device typically used in rapid prototyping apparatus as taught by Andersson, et al.

Response to Arguments

15. Applicant's arguments filed April 2, 2008 have been fully considered but they are not persuasive. With respect to the reference of Feygin, et al., Applicant argues that Feygin, et al. fail to teach that the powder dispenser is directly accessible from outside the casing for refill of powder material while production is in progress. The Examiner disagrees. First of all, the fact that there is a supply pipe and a powder or screen separator (item 13 – figure 1) outside the casing, allows direct access to the dispenser. Regardless of whether the user must dismantle the pipe or open the powder separator still allows direct access to the powder dispenser. Furthermore, with respect to Applicant's arguments that access is for refill of powder during production, such arguments address the use of the apparatus without further providing structural definition. Regarding intended use of the apparatus, it has been held that recitations of intended use are not germane to determining the patentability of the apparatus, In re Finsterwalder, 168 USPQ 530. Furthermore, the purpose to which the apparatus is to be put and an expression relating the apparatus to contents thereof during the intended operation are not significant in determining patentability of an apparatus claim, Ex parte Thibault, 164 USPQ 666.

With respect to the reference of Forderhase, et al., Applicant argues that Forderhase, et al. teach the use of multiple cartridges which can be exchanged during

production. However, the chamber of Forderhase, et al. is sealed from the outside environment during cartridge exchange. Thus, Applicant argues that Forderhase, et al. fail to teach that the powder dispenser is directly accessible from outside the casing during production. The Examiner disagrees. As written, *claim 1 does not require that the powder dispenser lie or be disposed within the casing*. The work bench and the irradiation gun are located within the casing; however, *claim 1 only states that the powder dispenser is directly accessible from outside the casing*. Thus, because the cartridges are exchanged outside the casing, the apparatus of Forderhase, et al. thus, includes a powder dispenser *directly accessible from outside the casing*. Though Applicant claims that its access is for refill of powder while production is in progress, as stated above, such a limitation is a recitation of intended use and is not germane to determining the patentability of the apparatus. Furthermore, even if the intended use of the apparatus were accorded weight, the phrase "while production is in progress" is vague. There is nothing in the claim which defines the limits of a production cycle. Assuming a production cycle is a complete period from start to finish of the fabrication of an object while in the casing, stopping the operation, to exchange powder bins or refill powder outside the casing includes access to the powder dispenser outside the casing while production is in progress. Thus, the Examiner maintains the rejections.

Conclusion

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARIA VERONICA D. EWALD whose telephone number is (571)272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Yogendra N Gupta/
Supervisory Patent Examiner, Art Unit 1791

MVE